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The Canons of Ethics and Professionalism

James Fenton, CPO*

Every society must have a set of rules or laws by which it governs itself. Without laws, society does not exist. The American Board for Certification in Orthotics and Prosthetics, Inc. is a society of sorts. It has a governing body, it has several different departments (committees), with department heads (committee chairmen), and it has citizens (certifees). It has laws by which it governs. It also has a department of justice in the form of the character and fitness committee. The one thing that our society does not have is a police department.

If there is no police department, how effective can our society be? The answer to that question is at the very heart of the word professionalism. There are several dictionary definitions of professionalism. However, I have a very strong inner feeling that professionalism is not defined by words alone. I believe that professionalism in our society is a commitment to do the very best job that you are capable of doing on each and every case. This is not to say that you have to live up to any individual standard, but you must live up to the standards of practice in your community. If you're capable of doing better, then you should commit yourself to that level of excellence to which you're capable. I also believe that professionalism involves a committment to your community: being an active participant in community affairs, being cognizant of the needs of the underprivileged of your community, and doing your fair share to alleviate their suffering.

Professionalism demands that a practitioner keep current of the knowledge of his profession by continued reading of technical manuscripts and attendance at seminars.

Professionalism is wanting to help in the day-to-day activities of the society by committee membership, by helping in the examination procedure, and by doing site evaluations.

All of these are ways in which I believe we can define professionalism in an idealistic way. The Canons of Ethics of the American Board of Certification does not really attempt to set standards of professionalism but it does set standards of conduct that, if breached, can lead to punitive action being taken.

Each and every certifee has received at least one copy of the Canons and if we all try to live up to the standards set forth in them, our patients will receive a better quality of care.

These standards are directed to the way in which we conduct ourselves in the day-to-day management of our patients as well as the manner in which we conduct our businesses and ourselves in general.

Rather than being idealistic, these standards are real. They were always meant to be the absolute minimum that our profession expects from us. Anyone who cannot live up to these standards should not receive the respect and recognition of his peers or the community.

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Canons of Ethical Conduct and the Law

John H. Harman†

Since its inception in 1947, the American Board for Certification in Orthotics and Prosthetics, Inc. has developed, perpetuated, and enforced a relatively straightforward and uncomplex set of rules for conduct in the profession of orthotics and prosthetics. Specifically, these rules are known as the Canons of Ethical Conduct and come under the jurisdiction of the Character and Fitness Committee, a permanent committee of the Board of Directors of ABC.

The impact of the Canons has been progressively larger as time has passed. In particular, as certification in the field of orthotics and prosthetics has become more and more important, the loss of suspension from such certification due to violations of the Canons of Ethical Conduct has become much more important.

Of course, canons of ethical conduct are nothing new. They have been around for hundreds of years.

Virtually every profession that exists has some form of ethical code which is designed to bring a minimum level of moral conduct to bear upon the members of that profession. Of course, the nature and character of such codes differ vastly but their purpose is always important. Even insurers recognize that self-regulation through codes of ethical conduct reduces the claims experience of insurance companies with regard to malpractice and product liability insurance. Thus, the impact in the field of insurance is significant. Belonging to an organization which engages in self-regulation through a code of ethics is a basis and factor to be considered by the insurance company in setting rates for insurance.

Orthotics and prosthetics is a unique profession. It has evolved from that of being more of an industry producing products to that which now is a technology of products bounded by professional services which are an integral part thereof. Thus, the Canons of Ethical Conduct for ABC, which are its self-regulating guide, parallel the canons of other professions, such as law and medicine, in a somewhat simpler form.

Throughout most of this century, self-regulation was accepted and encouraged as a fundamental aspect of professionalism. Indeed, professional self-regulation was long regarded as necessary to set high standards and to protect the public from the unscrupulous or incompetent. Even the Supreme Court of the United States has stated that the ethics of a profession are but the consensus of expert opinion of the necessity of such standards. Indeed, for the first three quarters of the twentieth century there was not one decision by the courts involving matters which questioned self-regulation in the professions.

However, in the last decade self-regulatory efforts have come under sharp and increasing attack. In various cases, the courts have held that various aspects of codes of ethical conduct violated fundamental antitrust laws and related legal principles. Prices set by ethical codes in minimum fee schedules have been stricken. Prohibitions against competitive bidding have been abolished. Likewise, prohibitions against advertising and solicitation have been eliminated.

Further, the courts have held that associations which engage in standards-setting may be liable for improprieties promulgated in relation to such standards that affect competition.

Self-regulation is particularly important in the professions because, to the extent that market forces do not function as effectively as in ordinary commerce, self-regulation can offer a degree of consumer protection that otherwise would be provided by competition.

The premise, and thus the promise, of professional self-regulation is that it will raise the quality or lower the cost of services in areas in which lay persons, because of a lack of sophisticated training, are not particularly able to achieve these goals.

However, the system has not functioned as envisioned. Professions have failed to one degree or another to effectively eliminate from their midst those who have abused their position. Professional dicipline has became more and more the problem of state agencies and not the professions themselves.

Worse still, those who were supposed to regulate themselves in the public interest sometimes chose to regulate themselves in their own interest. Finally, as social values evolved, some self-regulatory positions that had been adopted to protect the public came to be perceived as being selfishly motivated. Restrictions on professional advertising, for example, were imposed out of a conviction that any possible informative value would be outweighed by the potential for deception.

As generally happens, the law has come to reflect the changes in society's attitudes. Where self-regulation once has been uncritically accepted, the change in the prevailing view led to the placement of limits on the process.

This is not to say that because of the application of antitrust laws and the active development by the courts in the last ten years of various theories which have nullified certain aspects of codes of conduct, such ethical codes are no longer valuable and should be abolished. Quite the contrary is true.

Codes of ethical conduct contain basic fundamental ingredients and have applications which are important to self-regulation by the professions. However, those codes must conform to the judicial guidelines laid down involving restrictions and limitations on their content, application, and enforcement.

It is still extremely important for the professions to regulate themselves and, indeed, their failure to do so may well be looked upon as equally as serious an impropriety as an over-zealous effort in self-regulation.

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Questionnaire

Professionalism

The Clinical Prosthetics and Orthotics—C.P.O. *editorial board believes that two-way communication will aid the growth of the profession. The Academy provides a forum, within this publication, through which practitioners can let their voices be heard on significant issues. Please take the time to complete the questionnaire on professionalism and return to: Charles H. Pritham, CPO, Editor,* Clinical Prosthetics and Orthotics, *c/o Durr-Fillauer Medical, Inc., Orthopedic Division, 2710 Amnicola Highway, Chattanooga, TN 37406.*

1. Do you believe the profession's Canons of Ethical Conduct benefit the public?
   Yes _____ No _____
2. Do you believe they are adequately enforced?
   Yes _____ No _____
3. Do you believe that society has benefited from the presence of various governmental bodies in the area of self-regulation (of all professions)?
   Yes _____ No _____
4. How do you define professionalism?
5. Other Comments:

Analysis of the Results From the Questionnaire on Metal vs. Plastic Orthoses

By May 1st, fifty-four (54) responses had been received, considerably more than usual. Fifty-two (52) respondees were certified personnel, one was a physician, and one was an unspecified "other." Interestingly enough, the individual listing himself as other was by far the most negative in his comments.

The results were as follow:

1. Percentage of plastic vs. metal orthoses prescribed:
   100% plastic—17%
   75% plastic, 25% metal—61% of the time
   25% plastic, 75% metal—13%
   100% metal—2%
2. Percentage of staff trained in plastic:
   100%—74% of respondees
   75%—9%
   50%—9%
   25%—7%
3. Most significant advantages:
   lightweight—43%
   cosmesis—28%
   versatility—26%
   correction increased—17%
   other—11%
   total contact—9%
   Many individuals checked more than one.
4. Most significant disadvantage, most commonly indicated factors (actual numbers):
   1. Inability to adjust dorsiflexion/plantarflexion—20
   2. Fluctuating edema—7
   3. Fitting a proper shoe and heel height—5
5. Durability of plastic and hybrid orthoses vs. metal orthoses:
   more durable, less maintenance—40%
   equal—30%
   less durable, more maintenance—22%
6. Do you agree with Mr. Shurr's arguments for the use of traditional metal upright orthoses?
   yes—69%
   no—30%
7. Do you share Mr. Shurr's skepticism regarding prefabricated plastic AFO's?
   Yes—83%
   No—13%

This seems to be one issue about which considerable unanimity exists within the profession. Questions one and two seem to indicate that plastic plays a major role in the practice of many orthotists and that most of them are versed in its usage. The re-

sponse to question 5 indicates that most practitioners are not experiencing significant problems with durability, probably as good an indication of good fabricating technique as any. In looking at questions 3, 4, 6 and 7, it appears that most respondents understand the role of plastic in orthotics and its advantages and disadvantages.

In light of this unanimity of opinion it is interesting that the question of plastic vs. metal should excite enough interest to spark so large a response, particularly as plastic orthoses have now been in use for over ten years. It may be that orthotists still confront the need to defend plastic orthoses and justify their use. Contrarily it may be that enough individuals have enough experience with plastic that they feel comfortable responding to the issue.

Additional responses: The following samples are chosen somewhat at random as examples of differing opinions:

Comments on question 4:

1. It is my firm belief that the fixation of any joint will have the result of severe atrophy and eventual fusing of the joint. The long term results of the use of the (non-jointed) plastic AFO are not known. Putting it simply:

What's the use of working toward recovery of use of an extremity (and that return gradually takes place) when the 'treatment' by an orthotic device has created other problems that the degree of recovery is not able to overcome?

2. I feel there has been an overemphasis on plastic AFO/prefab AFO used by R.P.T.'s which have a limited application, and may be used with some success on geriatric patients in convalescent areas. They do make damned good night splints and that's about all. If used on hilly terrain or streets the patient usually ends up on his butt or smashes his face.

3. How anyone could argue the cause for plastic AFO's is unreal. Any amount of comparisons with the traditional AFO reveals less durability and limited function. Seven out of 10 patients have disabilities necessitating metal over plastic, numerous modifications [to plastic] are a *must*, and medial lateral support is nil. In my experience, I have found that very mild cases necessitate the use of a plastic AFO when drop-foot (only) is the reason for bracing. Instability in the M-L plane is often accompanied by drop-foot, thus ruling out the plastic AFO.

4. I feel that the plastic AFO is definitely a more desirable type of orthosis for all the reasons mentioned in question #3. However, not every patient is a candidate for a plastic AFO, especially if the patient has edema or needs adjustability at the ankle.

5. Most students coming out of schools at this time *only* know how to make plastic AFO's and are not proficient or comfortable in making conventional orthoses. These "students" who usually possess degrees never spend sufficient time working in the lab to become bench technicians and most, when handed a pair of bending irons, are in jeopardy of hurting themselves.

6. I agree with Mr. Shurr, but only from the standpoint of a therapist. Adjustment of plastic AFO's requires more than just a general knowledge of thermoplastics. During patient rehabilitation, minor changes in the degree of dorsi or plantar flexions that the orthosis is set in can make a drastic change in patient function. In clinical settings, this should always be done by the orthotist. However, physicial therapists working with patients wearing AFO's may not have accessibility to an orthotist whenever they want to "experiment" with different ankle settings. I can therefore understand Mr. Shurr's interim preference. This is, however, no comparison between the superiority of plastic systems over metal. Orthotists should be involved with any change made to their patients orthotic system.

In response to question 6:

Therapist adjustment syndrome (TAS) is not a valid RX criterion.

General Comments:

Far more important than durability is the ability to provide superior fit alignment and function. Improperly fitting plastic orthoses, by their very nature, are far more obvious and as a result more nearly considered unacceptable than the traditional Brace—which by *its* very nature masks improper fit and alignment and of course results in improper braces being worn. In 1980, we introduced a policy of providing all necessary repairs and adjustments without additional cost for the life of any plastic orthosis. This policy specifically excludes traditional metal/leather braces.

The following was received past the deadline for the Spring C.P.O., *for which it was intended. Because of the interest in the subject it addresses, we are printing these comments here. Anyone wishing to respond to the points the author raises may do so through letters to the editor. Our thanks to Dr. White for submitting his editorial.*

The Editor

Some Comments on Cervical Orthoses

Augustus A. White, III, M.D.*

Introduction

A classic history on the development of orthopaedic appliances, including some interesting material on cervical orthoses, has been written by J. W. Edwards (1952). A reading of this work quickly illustrates that many orthotic devices bear a striking resemblance to components of medieval armor. Particularly prominent in cervical orthotics is the work of Hugh Owen Thomas. This ingenious, chain-smoking, nineteenth century inventor developed a number of useful orthopaedic appliances, and is credited with the basic design of the cervical brace used today and known as the Thomas cervical collar.

Functions of Cervical Orthoses

Any cervical orthosis is really a device designed to apply forces to the cervical spine in order to control it in some way. The goal of that control is usually support, rest, immobilization, protection, or correction. The application of the forces restrains the normal or abnormal patterns of movement or alignment of the cervical spine. When the goal is to rest the spine, the device must assist or substitute for stabilizing muscle action. For example, a cervical collar may be used to prevent extension into a range that is painful or irritating to the patient. In another instance, the purpose of the orthosis may be to protect the vital spinal cord or nerve roots. This would be required when the spine has been rendered unstable by tumor, disease, surgery, or injury. A cervical orthosis can also function simply as a reminder and psychological "support." When the patient moves, he or she is made aware of the brace and therefore voluntarily restricts motion. In addition, the orthosis may provide warmth and physical support that is reassuring to the patient.

After the physician makes a diagnosis, and elects to treat a particular problem with a cervical orthosis, it is helpful to identify the specific mechanical functions that are to be achieved with the orthosis (see Table I). Is the goal to support (rest), immobilize (protect), or correct the spine? It is helpful for the clinician to go through the process of determining which of various motions of the spine must be controlled. Is it flexion, extension, lateral bending, axial rotation, or some combination of these? By thinking through these questions, a more rational and precise orthotics selection can be made.

Table I

Systematic Analysis for the Selection of Orthoses

(1) Determine the goal of orthosis:
- Support (rest, assist)
- Immobilization (protection)
- Correction

(2) Determine how many degrees of freedom are to be altered:
- Flexion
- Extension
- Lateral bending
- Axial rotation
- Axial distraction

(3) Determine the magnitude of control:
- Minimum
- Intermediate
- Most Effective

Orthotics Evaluation Studies

Before discussing examples of cervical orthotics, it is helpful to review briefly the experimental work upon which we base our clinical recommendations. *In-vivo* cineradiographic studies by Hartman and colleagues evaluated the effectiveness of immobilization of various orthotic devices on the cervical spine (Hartman et al. 1975). These studies compared five different cervical orthoses (Findings are shown in Table II). The investigators concluded that the motion that was most difficult to restrain was that between the occiput and C2.

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Table II

Effectiveness of Cervical Spine Orthoses in Immobilization*

Orthoses	Approximate % Restriction of Range of Motion C1-C7					
	Motion Picture			Cineradiograph		
	FE**	LB***	AR†	FE	LB	AR
Soft cervical collar	5–10	5–10	0	0	0	0
Hard plastic collar (Thomas)	75	75	50	75	75	50
Four-poster cervical	80–85	80–85	60	85	85	60
Long two-poster	95	90	90	90	90	90
Guilford two-poster	90–95	90–95	90–95	90	90–95	90
Halo device	Essentially no motion					

*Based on data from Hartman, J.T., Palumbo, F., and Hill, B.J.: Cineradiography of the braced normal cervical spine. *Clin. Orthop.*, 109: 97, 1975.
**FE: Flexion/extension (x-axis rotation)
***LB: Lateral bending (z-axis rotation)
†AR: axial rotation (y-axis rotation)

An evaluation of cervical braces by Johnson and colleagues placed normal subjects in different orthotic devices (Johnson et al. 1977). Photographs and radiographs were used to determine differences in range of motion with and without the subjects wearing various orthoses (Findings are shown in Table III). It was found that by increasing the vertical length and the rigidity of a given cervical orthoses, there is improvement in its ability to control motion. In general, it was found that controlling lateral bending and axial rotation is more difficult than controlling flexion/extension. The most effective conventional braces are able to restrict C1-C2 flexion extension by only 45% or normal. The halo apparatus restricts the motion by 75%.

In summarizing this experimental data, the following generalizations are valid. The soft collar does little in the way of immobilizing the cervical spine. The rigidity of the components at the chin and the occiput are the main elements in restricting motion. As one adds shoulder or thoracic fixation to the various conventional cervical collars, the immobilizing capacity of the orthosis is increased. When the added chest support is actually fixed to the thorax, the immobilizing efficiency is further improved.

Table III

Efficiency of Cervical Braces in Immobilization*

Orthoses	Total Movement From Full Flexion to Full Extension** (degrees)
Soft cervical collar	101
Hard plastic collar (Thomas)	58
Four-poster cervical	25
Duke (occipital, chin, and chest piece)	2

*Based on personal communication with R.M. Johnson
**The median normal is approximately 90 degrees.

Clinical Review of Some Specific Cervical Orthoses

To follow is a review of the major types of cervical orthoses. They are categorized on the basis of *effectiveness of control*. Thus, we have divided cervical orthotics into minimum, intermediate, and most effective control (Table III).

Minimum Control: The basic Thomas collar and numerous variations of it are examples of minimum control orthoses. These collars vary in height, contour and rigidity. They may be worn either forwards or backwards to increase or decrease the amount of flexion/extension possible. Generally, they are to be worn so that the chin rest, which is a convexity in the collar that points downwards, is anterior. However, some patients find it more comfortable to reverse this position, and certainly in cases where one is more interested in restricting extension than flexion, a reversal of this position will block extension more effectively. In other words, if a high portion of the collar is worn posteriorly there is relatively less extension. Although these collars probably do little or nothing in the way of immobilizing the spine, they do provide warmth as well as psychological comfort and support. They can be helpful to the patient in the treatment of a broad variety of conditions including some whiplash injuries, minor sprains and strains, cervical spondylosis, and some stable postoperative surgical constructs.

Intermediate Control: There are a number of orthotics that are appropriately classified in this

group. The Philadelphia collar is a beefed-up version of a Thomas collar. It is more rigid, has an anterior and a posterior plastic reinforcement, a rigid chin support, and a significantly developed extension block posteriorly to support and restrict the occiput.

In order to achieve a greater level of immobilization, some extension of the orthosis down into the shoulder and/or thorax is required. This lengthening of the orthosis provides a more effective anchoring, purchase, and immobilization. There are several braces that fit into this category, most notably the four-poster brace, the Duke brace, the Guilford brace, and the SOMI brace. The SOMI is the most effective immobilizer in this group. These orthoses are probably more effective in the standing and sitting positions. In the supine, prone, or side lying positions, relaxation and rotation of the shoulders and thorax minimize the effectiveness of these orthoses.

We should also note that if we wish to prevent anterior displacement of C1 o C2 in a rheumatoid patient we cannot rely upon a soft cervical collar, a Philadelphia collar, a four-po er brace, or even a SOMI brace (Altoff and Goldie 980).

Most Effective Contr l: If there is a clinical problem involving significa t loss of clinical stability, the cervical orthosis hould provide the maximum amount of immobil zation, unloading of the spine, and protection. Majo control is needed in all of the parameters of motio . Depending on the particular clinical situation, it ay be more important to control some particular motion or combination of motions.

One option in this situation i a significantly more rigid version of the Thomas col ar. The Minerva cast incorporates the concepts of xtending the brace down towards the thorax and i mobilizing the chin and occiput. This cast extend from the forehead down to the pelvis. The godde s Minerva was born by popping from the head of Ju piter, fully armored. From this Roman myth the cas has taken its name. This device, although not used ery much currently, can be useful, especially in th protection of irresponsible patients. It should be kept in mind, however, that even with a well-ap ied Minerva cast, a few degrees of cervical spine motion are possible. Most of the motion occurs at th occiput-C1 region. The cast has to be open enough o allow an adequate range of motion for the mouth s that the patient can talk and chew. This same range of motion allows for motion at the occiput-C1-C2 j int complex. Thus, when your patients are in a Mir rva cast but can talk and chew, you must be aware that they can move C1-C2.

In difficult clinical situations, where there is extensive disease or surgery, or an injury has rendered the cervical spine unstable, use of a halo apparatus should be considered. This device is fixed to the skull with pins and is attached either to an individually molded plaster jacket or to a prefabricated jacket which comes in several sizes. Experimental studies generally agree that this device is the most effective immobilizer of the cervical spine. One should be aware that use of this device carries the risk of several complications. These include: penetration of the skull by fixation pins, brain abscesses, abducens, glossopharangeal and facial nerve palsy, and the development of cervical spondylosis. Facial complications can be recognized during the first few days after application by requesting patients to smile, roll their eyes, and stick out their tongue. If the patient is unable to do any of these three activities, careful neurological evaluation is indicated.

Resume

A rational approach to the use of cervical orthotics may be taken by posing several questions. What is the clinical condition of the spine? What are the therapeutic goals to be achieved by the brace? Is the goal to protect the spine, or to rest it? In what way should the mechanics of the spine be changed to achieve that goal? What kinds of forces are necessary in order to achieve these therapeutic aims?

In the cervical spine, the standby orthosis for minimal immobilization is the Thomas collar. If one needs a high level of control, then an intermediate zone orthosis, such as the Philadelphia collar or any variety of collars that involve thoracic attachments, can be employed. The SOMI brace is the most effective in this intermediate group. If the therapeutic goal is to obtain maximum control and immobilization of the cervical spine, a halo apparatus with an individually molded plaster jacket is required. One should be aware that this apparatus carries the liability of exposure to complications. These complications can be minimized by diligent care techniques and follow-up evaluation.

References

Altoff, B. and Goldie, I.F.: Cervical collars in rheumatoid atlauto-axial subluxation. A radiographic comparison. *Annals of the Rheumatic Diseases* 39: 485, 1980.

Edward, J.W.: *Orthopaedic Appliances Atlas*. Vol. I, Ann Arbor, Michigan, American Academy of Orthopaedic Surgeons, 1952.

Hartman, J.T., Palumbo, F., and Hill, B.J.: Cineradiography of the braced normal cervical spine. *Clinical Orthopaedics* 109: 97, 1975.

Johnson, R.M. et al.: Cervical orthoses. A study comparing their effectiveness in restricting the cervical motion in normal subjects. *Journal of Bone and Joint Surgery* 59A: 332, 1977.

O'Brien, J.P.: The halo-pelvic apparatus. A clinical, bio-engineering and anatomical study. *Acta Orthopaedica Scandinavica* 163 (supplement), 1975.

Victor, D.I., Bresnan, M.J., and Keller, R.B.: Brain abscess complicating the use of halo traction. *Journal of Bone and Joint Surgery* 55A: 635, 1973.

White, A.A. and Panjabi, M.M.: *Clinical Biomechanics of the Spine*, Philadelphia, J.B. Lippincott, 1978.

Technical Note:
Wrist Flexion Unit Modification

by Peter A. Ockenfels, CPO*

Several years back we learned that a wrist flexion unit, be it the Homser FM 500, 300, 200, or the Pope Easy Flexion Wrist PW 4-6, has little value for bilateral above elbow or bilateral shoulder disarticulation amputees. The patient involved, a right true shoulder disarticulation and left humeral neck amputee, had been successfully fitted with bilateral prostheses. The term "successful" can only be used in terms that the patient felt comfortable, was able to flex his elbows to 90 degrees and 135 degrees, and able to open the terminal device with extended elbow 100 percent of full opening elbow flexion of 90 degrees, 80 percent, and at elbow flexion of 135 degrees, 50 percent. Both prostheses were harnessed with leg loops and the usual elbow lock controls. Wrist units were prescribed and incorporated into both forearms, but proved to be quite useless due to the fact that the patient was unable to activate the wrist units.

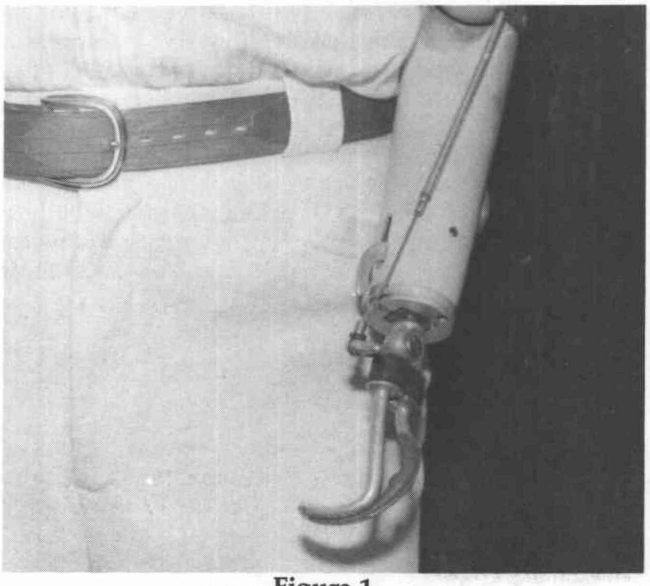

Figure 1.

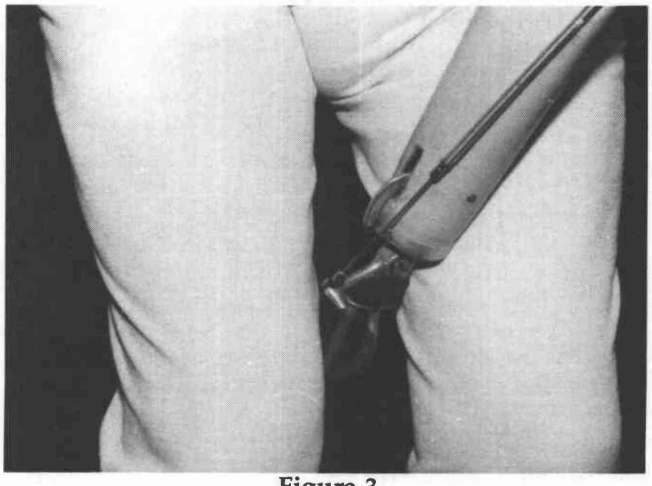

Figure 3.

To rectify the situation, the following modification was constructed. The trigger bar that activates the wrist flexion units is located medially on either wrist unit; therefore, an activating lever was designed and incorporated into the forearm (Figure 1), so that the patient can trigger wrist flexion by pushing against a chair, his leg, or any other object (Figure 2). Extension of the wrist unit is achieved using the legs (Figure 3). The trigger lever (Figure 4) is made of $\frac{1}{8}$" aluminum and pivots on a $\frac{3}{16}$ half-threaded rod, mounted in the sides (ant. and post.) of the forearm wall. The patient no longer uses his right SD prosthesis and has been converted to a special chest harness. The wrist flexion trigger mechanism has proven to be very successful, and the patient would not be able to accomplish many tasks of daily care without it.

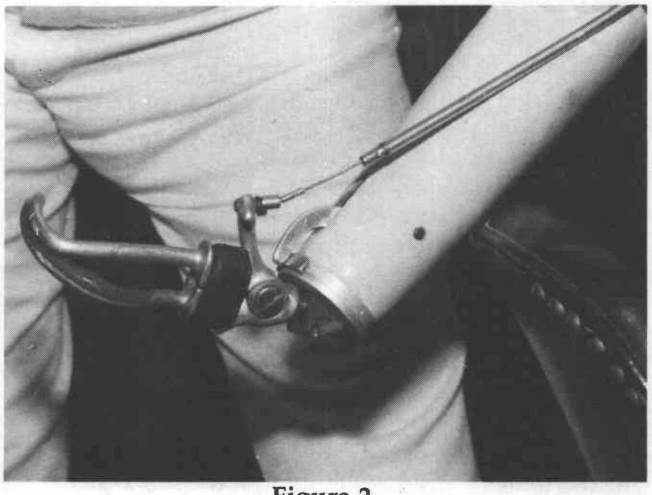

Figure 2.

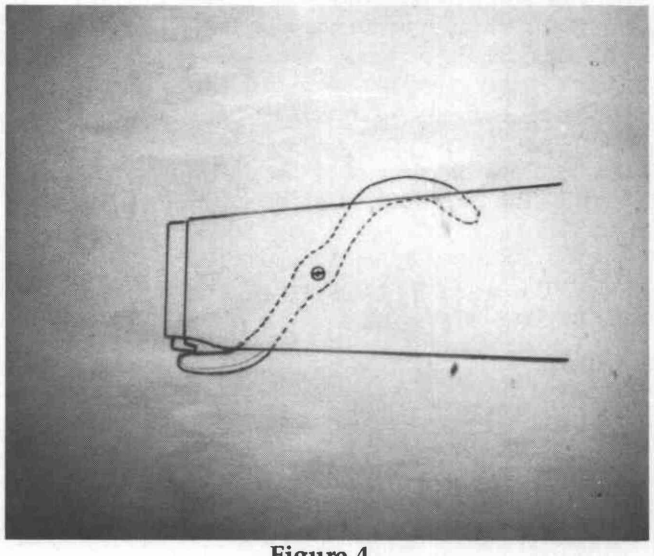

Figure 4.

*American Orthotic & Prosthetic Laboratory, Inc. Columbus, Ohio

LETTERS TO THE EDITOR

The following letters were received in response to issues raised in the Spring issue of *C.P.O.* Your comments regarding these letters, or any other pertinent topics, are welcomed.

Dear Editor,

I was gratified to see the article about bivalved cervical spinal orthoses in the [Spring] issue. I presented a paper on this technique in Albuquerque, New Mexico at a Region VIII meeting in 1970, and can contribute a little to Dr. Lehneis' method of taking measurements. The best thing to protect patient (bedclothes and floor) from the plaster splints is a one thickness piece of the plastic bag in which your suits come from the cleaners. This material can be purchased in a large continuous roll and has many applications in our profession (trade name Tex-Trude available through Century Papers, Inc., Houston, Texas). Slides of our techniques are available for the asking.

Sincerely,
T.R. Owens, CO
Galveston Brace & Limb Co., Inc.

Dear Editor,

I agree with Mr. Wilson that technical information should be straightforward and to the point without frills.

I feel that in conversation with a person, one may want to select his choice of words carefully. In some cases, I find the direct approach to be the best. Let the person know it's a hard world out there. The person who is having the service performed and who cannot accept the words, "stump or amputation," to me, is a person who has not yet faced reality.

Perhaps the word client could be used instead of patient. Webster says a client is "a person who employs anothers services," and clientele is "a group of clients, as a doctor or lawyer; a following."

Sincerely,
Charles W. Childs, CPO
Pacific Orthotic Prosthetic Service

Dear Editor,

Thank you for printing my letter in the Spring issue of *Clinical Prosthetics and Orthotics*. I hope it draws some response because that was the intention when I wrote it.

Your criticism of "anatomical replacement" was accurate, but slightly harsh. Anatomical replacement hand, anatomical replacement foot, ear, etc. is the logical extension to my suggestion, although prosthetic hand, prosthetic foot, etc. mean the same thing. I hope you also get response to your comment.

With regard to Mr. Wilson's concern over "residual limb," I have to admit my own guilt because I use the term frequently. I considered "remnant limb" as an alternative, but it connotes scraps or waste and therefore may be undesirable. "Partial limb" is an accurate description of the amputated limb or stump and has no particular negative connotations that I can perceive. I therefore suggest "partial limb."

I'll be interested in seeing what others may suggest with regard to the above issues.

Yours truly,
Bob Radocy
Director, Therapeutic Recreation Systems

Meetings and Events

Please notify the National Headquarters immediately concerning additional meeting daes. It is important to submit meeting notices as early as possible. In the case of Regional Meetings, it is mandatory to check with the National Headquarters prior to confirming date to avoid conflicts in scheduling.

1983

July 29–30, Surgical Support Workshop, sponsored by Freeman Mfg. Co., Holiday Inn, Kansas City International Airport, Kansas City, Missouri. Contact: Freeman, Drawer J, Sturgis, Mishigan 49091, 800-253-2091.

July 31–August 4, National Spinal Cord Injury Association Annual Convention, Americana Congress Hotel, Chicago, Illinois. Contact: Illinois Chapter, National Spinal Cord Injury Association, P.O. Box 468, Palos Park, Illinois 60464, 312-974-1103.

August 14–18, Boston Scoliosis Brace Course, sponsored by the Dept. of Orthopedic Surgery, The Children's Hospital, Boston, Massachusetts. Contact: Paula Roth, Department of Orthopedic Surgery, The Children's Hospital, Boston, Massachusetts 02115.

September 5–9, The IV World Congress of the International Society for Prosthetics and Orthotics, Imperial College of Science and Technology, London, England. Contact: Joan E. Edelstein, Secretary-Treasurer, U.S. National Member Society of ISPO, 317 East 34th Street, New York, New York 10016, 212-340-6683.

September 16–17, Forum '83—A National Symposium on Custom-Fitted Seating Systems, sponsored by the Academy and the Newington Children's Hospital. Contact: The Newington Children's Hospital, Orthotics and Prosthetics Dept., 181 East Cedar St., Newington, Connecticut 06111.

September 21–23, Annual **Advanced** Course on Lower Extremity Prosthetics, Nassau County Medical Center, East Meadow, New York. Contact: Dept. of Physical Medicine and Rehabilitation, Nassau County Medical Center, 2201 Hempstead Turnpike, East Meadow, New York 11554, 516-542-0123.

October 17–21, UCLA Seminar, "Advanced BK Prosthetics Techniques." Contact: Peggy Colton, Program Coordinator, UCLA P.O.E.P., Rm. 22-46 Rehab. Center, 1000 Veteran Ave., Los Angeles, CA 90024.

October 25–30, AOPA National Assembly, Hyatt Regency, Phoenix, Arizona. Contact: AOPA National Headquarters, 703-836-7116.

December 12–13, UCLA Seminar, "Amputation Surgery Immediate Post Surgical Prosthetic Techniques for Physicians/Prosthetists." Contact: Peggy Colton, Program Coordinator, UCLA P.O.E.P., Rm. 22-46 Rehab. Center, 1000 Veteran Ave., Los Angeles, CA 90024.

Technical Note:
A Cervical Orthosis Modification

Paul Trautman, CPO*
George Varghese, MD†

Recommending or prescribing the best possible cervical orthosis for a patient whose cervical vertebrae require support is a difficult task for an orthotist or physician.

In recent years the plastazote™ (Philadelphia) cervical orthosis has become a highly prescribed device for several reasons (Figure 1). Most importantly, the orthosis limits flexion and extension of the cervical spine as well as rotation between C-3 and C-7 and patients find it reasonably comfortable and accept wearing it. This is due, to some extent, to the fact that the low temperature, and easily moldable plastazote™ conforms in time to the patient's contours. The better distribution of pressure and comfort for the patient may provide more relaxation of the para-cervical spinal muscles.

Secondly, the Philadelphia cervical orthosis is relatively inexpensive compared to more rigid appliances. Thus, it is less costly to replace when it becomes contaminated or spoiled beyond cleansing.

A third important feature is the ease of selecting and donning the device. Only two measurements, the length of the neck and the circumference of the neck are required. The orthotist is able to provide the item to the patient readily, and it is not necessary to maintain a large, costly inventory.

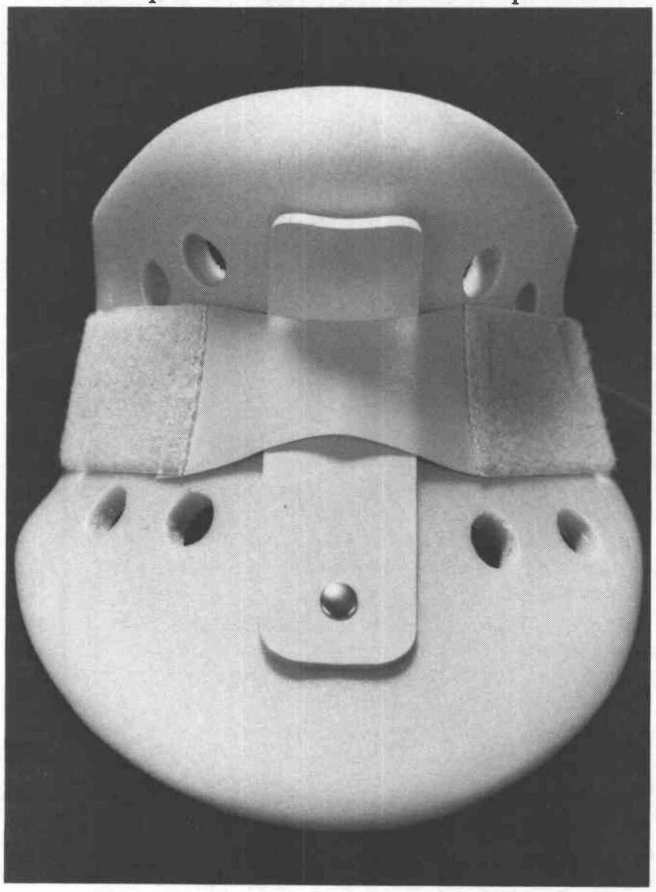

Figure 1.

In the Neurosurgery Intensive Care Unit of the University of Kansas' Bell Memorial Hospital, this cervical orthosis has become the orthosis of choice for treating head trauma patients. The posterior half of the collar can be slipped behind the patient's supported head and neck with a minimal amount of need to move the patient. The anterior half is easily put into place to complete the fitting.

Since a number of ICU patients have required a tracheotomy it became necessary to modify the Philadelphia cervical orthosis. The design modification created by staff orthotist Wallace Whitney, CO is seen in figures 2 & 3.

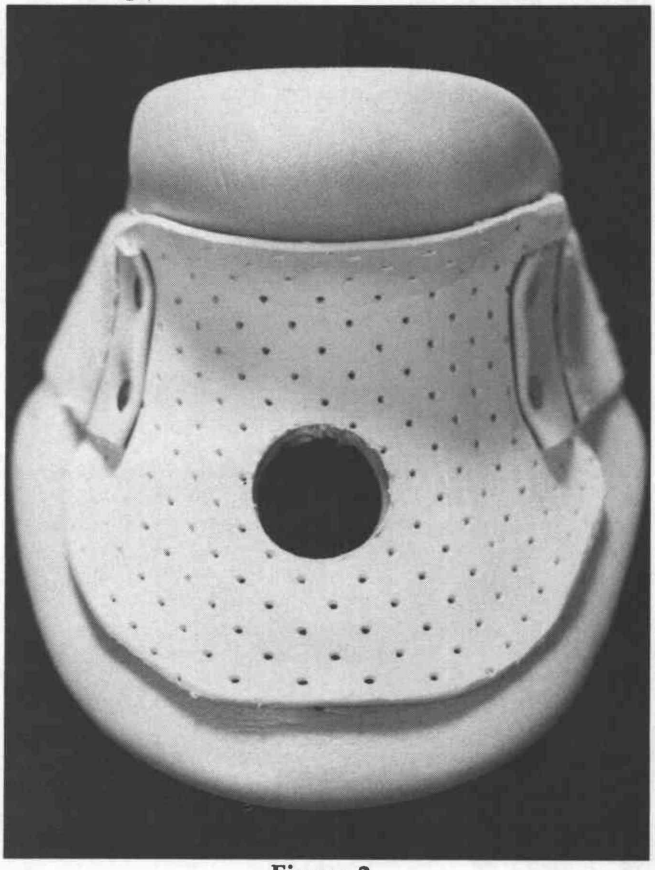

Figure 2.

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College of Health Sciences and Hospital
Kansas City, Kansas

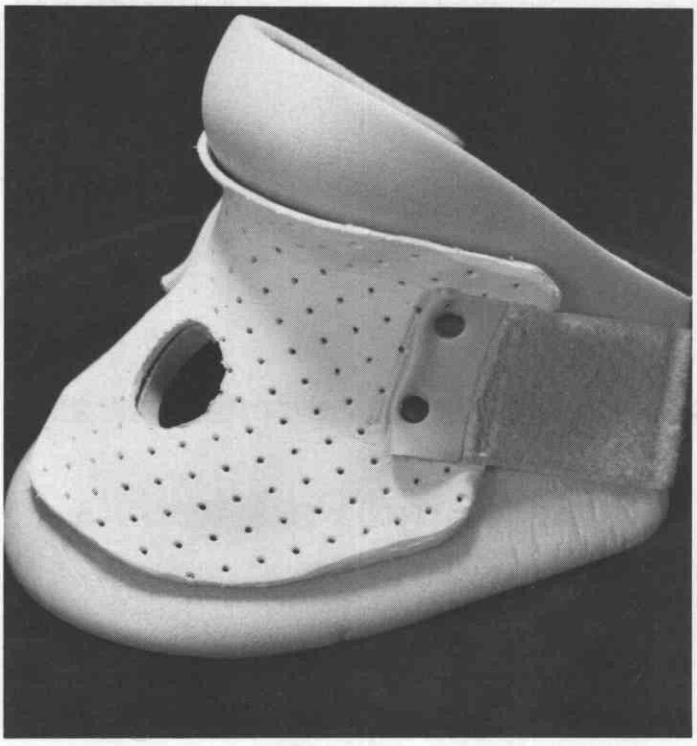

Figure 3.

Since we do this modification fairly regularily we have made a plaster cast to preform the low temperature plastic (K-splint™ or Orthoplast™) reinforcement piece. The original anterior strap is cut in the center, folded over and riveted to the plastic reinforcement piece and the collar. A hole (1¼ inch) for the tracheotomy tube is cut through the collar. A side effect is that the collar is made slightly more rigid which is often desirable for those patients.

Announcement

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